

4: Geijskes G, N-5 (1952) 1954

SR8 Bush Negroes SR8

Agriculture among the Bush Negroes of the Maroni ~~000~~
[De Landbouw bij de Bosnegers van de Marowijne]

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The Hague: 1954
De West-Indische Gids
Vol. 35, pp. 135-153

Translated from the Netherlandish by Richard Neuse

Human Relations Area Files

1966

[Title page]

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Agriculture among the Bush Negroes of the Marowijne /Maroni/

by D. C. Geijskes (1)

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1. Introduction

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When one goes to the small communities of the inhabitants of the bush who live in the interior districts of Surinam, one quickly sees, upon examination, the basis on which the maintenance of such communities rests. The struggle for existence among primitive peoples covers the food supply and the resistance that can be offered against illness and pests. These two factors ultimately determine the birth surplus, which as a result expresses the possibility for survival.

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Among the Bush Negroes we see in the course of the years an increase in the population, an advance, therefore, in spite of the obstructions of nature. But this advance creates new problems. It was during the Medical-Scientific Expedition to the Southern Border of Surinam, held from February to July, 1952, that, in conjunction with the medical investigation in the gathering of data about the "housekeeping" of the Bush Negroes of the Marowijne /Maroni/ and the Tapanahoni, we were struck above all by the problem of the food supply and the food itself. There is little sense in paying attention only to medical care unless at the same time attempts are made to improve the food.

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An important part of the food supply is produced by agriculture. This supplies the Bush Negroes with the most, but not the best food. Next to it a number of forest products serve to provide for the need for food fats, while hunting and fishing must provide the protein.

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[241] The agriculture of the Bush Negroes, however, has become a matter which urgently demands the attention of the administration as a result of the wasteful use of land. Until now little attention has been paid to this, but if one wants to develop the interior of Surinam, this problem will also have to be looked into.

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[103] The data provided here throw light upon the agriculture of the Paramaccaners and the Aucaners on the Marowijne and the Tapanahoni. They were gathered during the above-mentioned medical expedition and during a trip to the Tapanahoni in October, 1952. The facts thus refer primarily to the Marowijne, but in general they are certainly also valid for the other rivers along which the Bush Negroes live. It is a typically Surinam problem, connected with the circumstance that the Bush Negroes have worked in the deep interior in the same fashion for hundreds of years, independent of the life in the civilized coastal region and almost completely outside the sphere of interest of the government.

2. The Grounds System

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[311] For the planting of agricultural crops the Bush Negro lays out little so-called food grounds. One is to understand by this cleared pieces of ground in the virgin forest on which the crops are cultivated. The grounds lie along the rivers on higher flat lands, mostly terraces that are not submerged during high water or, in the absence of such terrain, on the slopes of hills. They are more or less circular and have a surface area of a half to one and a half hectares.

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462 During the long dry season (October, November) the men clear the grounds. Two to three weeks thereafter the forest that has been felled is burned; the smaller branches are cleared away, but the trunks are left lying. The ground is not worked. As soon as the rains of the short rainy season begin, they start to plant and sow. This planting time falls in December and January. The wives of the Bush Negroes (for only the women do the further work) now plant all kinds of crops at the same time on one and the same ground.

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24/
22/ the same ground. The crops are thus scattered higgledy-piggledy or at best are arranged in little patches. The harvest periods of these crops have a certain sequence. Two groups are to be differentiated, namely, (1st) the rapidly growing "annual" crops, and (2nd) the perennial crops, which grow more slowly.

/137/ To the first belong:

maize, is harvested after three months (in February and March);

watermelon, idem;

okra, produces edible fruit in three months (February, March) and still for a time after that;

pumpkin, gives ripe fruit in four months (April) and thereafter;

pinda /peanut/ and ogobo, blooms after three months (February,

March) and supplies produce after five months (May, June);

bongila, idem;

tobacco, is ripe for picking after 4-5 months, blooms after 7 months;

rice, is ripe after 4-5 months (May-July).

To the second category belong the perennial crops:

sugar cane, is cut already after 5-6 months, but the stools are kept up to two years and longer;

cassava, the tubers are harvested after 7 months and longer;

tajer, napi, yams, and patatas, are harvested (aside from exceptions; see separate list) after 8 to 10 months (August to November), but also continuously thereafter;

pineapple, is ripe after 9 months;

bacove, ripe fruit after 10 months, the stools are kept;

bananas, harvested after 10 to 12 months continuously after that from the new stools.

24/ The advantage of this method of planting is that the grounds supply something during the entire year. A disadvantage, however, is that new grounds must be laid out each year. In this manner, various grounds are always in use for a household /gezin/. In the first year the ground supplies above all the products that grow most rapidly and some perennial crops; in the second year one harvests principally cassava, bacove, bananas,

/137 cont. /

241 and sugar cane, while in the third year some pineapples, bananas,
245 and sugar cane are also harvested.

Thereafter one surrenders the ground to the second growth (kapoeweri) shooting up, here called "kauwé," and to the weeds, like the cutting grass "baboen nefi" (Scleria secans), which prevent further growth of the cultivated crop.

This system of clearing grounds requires much land. It is a severely predatory cultivation which can only be employed when sufficient free land is available. Only after many years can one return to the same piece of forest to lay out a new ground, depending on the recovery of the forest, more particularly on the top growth.

[592] Among the Bush Negroes of the Marowijne it is the rule that
[476] each household provide for itself. The man clears the ground with help of family /familie/ members or friends, who in return for food are taken in during this time. If the man has /138/ one wife, then ordinarily two grounds per year are cleared; if he has more than one wife, then he clears two grounds for each wife.

[622] The captain /kapitein/ of a village lays out his ground him-
[643] self, helped by his villagers. The granman /chief/, however, does not work himself, but, regardless of the number of his wives, has his family and other helpers clear grounds in return for food for the
423 workdays. The products of the grounds of a household are not joint
593 property, but rather the wife asserts her rights over the produce from one ground, while the man claims that from the other ground. Thus a distinction is made between the agrarian property of the wife and that of the husband.

3. The Plague of Ants and the Ant-bushes

241 In the agriculture of the Bush Negroes the plague of ants plays
245 a significant role. The leaf-cutting or parasol ants (Atta sexdens and Atta cephalotes) are very destructive because of their attacks on the leaves in the plantings. The first-named species is the greatest evildoer in the interior districts of Surinam. Cassava in

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825 particular suffers greatly from this type of ant, but maize, tajer, and bananas are also eaten. This plague is so serious that the clearing of a new ground is partially determined by the occurrence of the nests of these ants at the place. Normally these nests lie fairly far apart in the forest, but as soon as the crops of the grounds come within the domain of the ants, the nests grow rampantly. In addition, at just about planting time the ants produce numerous sexual forms, which, as a result of the cleared lands, have a favorable opportunity to swarm and found new colonies. The leaf-cutting ants are therefore "Kulturfolger" /followers of culture/.

As a result of this plague of ants, it is usually not possible for the Bush Negroes to cut extensions to the existing grounds for longer than two to three years. After all, the kapoweri of the abandoned pieces of ground functions then as a hiding place for the younger ant-nests, and one drags, as it were, the ant plague along with one. There is no combating the ants, and through impotence the Bush Negro is forced to yield the field. This flight before the ants consists in the search for new grounds farther into the bush or, in case this is no longer possible for some reason, in the occupation of new lands elsewhere along the river.

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136 /139/ Stahel (1) has pointed to the fact that among the Bush

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1. Het Bosnegervraagstuk en het Coroniëplan
/The Bush Negro Question and the Coronië Plan/, Department Landbouwproefstation Surinam
/Department of Agriculture Research Station,
Surinam/, Report No. 9, October, 1944, 28 pp.

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[114] Negroes the older grounds change into a low second-growth, called by him "ant-kapoweri" /ant-bush/. In effect, in many places where a dense Bush Negro population is found, such a strip of second growth occurs along the rivers. According to Stahel, this inferior bush comes about through the presence of the great nests of leaf-cutting ants. According to his calculation, at a density of six ant nests per hectare (a maximum which is confirmed in the vicinity of Paramaribo, but which, according to my own observations in the Bush Negro lands,

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13 seems too high to me), the ants can bring into the soil each year two to three tons of leaf material per hectare. As a result the soil would be so enriched with humus and, in addition, through the construction of the numerous nest corridors, receive so much extra ventilation that the oxygen content and the microbiological condition of this soil would tend to differ from the mineral soils in which the virgin forest is rooted. As proof of this, it is stated "that even the oldest ant-kapoweri directly behind the villages shows no tendency to grow into normal high forest" (p. 13).

114 It does not seem correct to me to ascribe this kapoweri
137 phenomenon only to the presence and the activity of the leaf-
136 cutting ants. In my opinion the ants here constitute a troublesome contributing factor, for when the virgin-forest grounds are abandoned by the population and no new food material is available to the ants while the kapoweri gradually grows into higher forest, then the balance in the ant population re-establishes itself. This process takes place at a slow rate, depending on the local circumstances, but it leads to the re-establishment of the original situation. There is, however, one condition connected with it, namely, that the forest be left in peace for a long enough stretch.
241 Now this last is not the case for the grounds area of the Bush Negroes.
134 They return too soon (within ten years) to clear grounds again, with the consequence that the soil becomes too exhausted and the recovery of the forest becomes impossible.

171 Proof for this viewpoint is already provided by Stahel (loc.
241 cit.) in his consideration of the agriculture of the upland Indians.
137 The absence of the ant-kopoeweri there is not a matter of a lesser
136 ant infestation, as Stahel /140/ believes -- for in places this is equally serious -- but of a less intensive use of the forest lands.
161 The Indians are present in small numbers (a few hundred, as against
423 thousands of Bush Negroes), while only communal plots are laid
361 out for one village, and not different ones for each family. In addition, the Indians move frequently in order to find new hunting and fishing grounds.

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241 There is yet another factor which plays a role in the origin
134 of the grounds-kapoeweri. This is the use of fire in clearing the
137 ground. The burning of the cut forest is done at the expense of
the humus on and in the soil. The fertilization with ashes that
one obtains by it only partially covers this loss. Furthermore,
under the influence of the fire there are great disturbances in the
balance of the microflora and fauna of the soil, hindering the con-
version of organic materials into inorganic compounds. Sun and
rain bring changes in the structure of the scorched earth, which
forms a cement-like crust and becomes sealed. Also the grow-
ing of cultivated crops, especially cassave, draws many mineral
components from the soil.

13 It is clear that the soil needs time to recover after this dis-
turbance of the balance. This period of time is estimated at 25-
30 years. The leaf-cutting ants play a part in this; they again
enrich the soil with humus by bringing great quantities of leaves
into their ground nests. In addition, they ventilate the soil by
digging numerous nest corridors. In this manner the ants contribute
[242] to the recovery. It is well-known, moreover, that the soil on old
leaf-cutting ant nests is fertile; one likes to plant bananas on it.
If we assume with Stahel that in this kapoeweri six ant nests per
hectare are found, then these nests together would only have a
maximum surface of one-tenth of it. This would never be able
to hinder the full growth of the forest.

136 That the leaf cutting ants occupy the secondary growth, or at
137 least are present there in greater numbers than is normally the case
241 in the forest, may be a consequence of the laying out of new
grounds within their domain. Because of the lack of land, the
Bush Negroes are constantly trying to lay out grounds again in this
forest. The ants, moreover can maintain themselves because there
are various forest trees that supply the ants with sufficient leaf
material.

13 Thus, because of both the decreased capacity of the soil and
311 the presence of the leaf-cutting ants, the ant-kapoeweri forms a
terrain that has become unusable for present-day primitive Bush
Negro agriculture./ 141/ And from the standpoint of forestry too the
ant-kapoeweri is worthless.

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4. The Agrarian Law

241 There is yet another circumstance which adversely affects
#23 the agriculture of the Bush Negroes. As among many primitive peoples, so also in the life of the Djoeka /Djuka/ customary law plays an important role. We have already seen that at least two grounds per year are laid out per household. In fact it comes down to this, that both the man and the woman possess a ground of their own. Now these two grounds do not lie next to each other or close to each other. On the contrary, the one ground is always hours away from the other one; it is to be found on the other side of the river or elsewhere along a forest creek. One might think that this is a kind of division of risks. In actuality it is a question of family property. The ground of the wife is cleared in the area of her family, and the ground of the man in his family complex. The grounds are thus laid out with reference to the large family and not with reference to the household. Each family has a definite area where it has the right to clear grounds. This area lies along a forest creek, or one lays out a path from the river through the forest, along which the grounds
[578] are cleared. Not infrequently, quarrels arise over the use of land by "unauthorized" persons on distinctly family land.

A Bush Negro thus cannot simply select a piece of forest for his ground wherever he pleases. He is bound by the law of family property. This applies not only to the families among themselves, but in a larger context also to the villages. Each village has its area within which the families from that village lay out grounds. Only through marriage can men lay out grounds for their wives in the area of another village.

These complications in agriculture lead to the circumstance that the hunger for land arises much sooner than would otherwise
[361] be the case. Add to this the fact that many Bush Negro villages remain in existence for a very long time, sometimes 100 years at a stretch, in the same spot. It is therefore not surprising that
[161] through the growth in population in such centers, too, the limit of this predatory cultivation has been reached.

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241 of this predatory cultivation has been reached. The nearby
 423 agricultural lands are kept in use with too brief a rest period, with
 {134} the result that the soil is overworked and the periodic recovery
 {125} of the forest proceeds at an ever slower pace. In addition one
 struggles to an increasing degree with the problem /142/ of the
 leaf-cutting ants, which keep the easily accessible places occupied.

241 The consequence of this circumstance is that the Bush Negroes
 311 are forced to make the grounds farther and farther from their vil-
 {484} lages. One travels for hours up or down the river in order to
 {422} reach good land. When one cannot make good use of a forest
 creek in order to transport the produce from the field, one is
 forced to carry the harvest for one or two hours through the forest
 to the river. The Bush Negro does not go farther than a two
 hours' walk (about six kilometers from the river, *see the map. p. 13* /).

241 On the Tapanahoni one spends even days in traveling to less
 311 populated areas in order to plant and to harvest. One then estab-
 361 lishes so-called work camps along the river, from which one
 {103} operates in the surrounding areas. This is the case, among others,
 between Godoholo and Granbori for people from Drietabbetje or
 311 other centers. That one does not go even farther up river, all the
 423 way past the last village, Granbori, has to do with a prohibition
 643 by the granman of the Aucaners. That is, the latter wants to re-
 serve the lands lying beyond this point as hunting lands and there-
 fore will not make them available for agricultural purposes.

241 The inhabitants of the villages along the lower Tapanahoni,
 311 such as Sajé, Clementi, and Malobbi, frequently lay out their food
 423 grounds in the Lawa, where they can have at their disposal agri-
 361 cultural lands as far as the Aboenasoengoe Falls. Farther upstream
 103 on this river the Bonni or Aloekoe Negroes assert their rights.

5. Differences between Aucaners and Paramaccaners

101 The conditions given above apply in the main to the Aucaner
 162 Bush Negroes of the Tapanahoni. They number today approximately
 {311} 6,500 persons. The Paramaccaner Bush Negroes of the Marowijne,
 approximately 1,700 in number, are in somewhat more favorable

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311 circumstances because with their lower population density they are less seriously in need of land. But the same fate awaits them in the near future. In addition, the cutting of the forest has more serious consequences in this region because as a result exploitable timber is lost. Along the Tapanahoni, above the greater falls, woodcutting is impossible for the time being, so that the loss of wood in these districts does not as yet play an economic role here.

6. Measures toward Improvement

433 The question now is whether the grounds-operations of the Bush Negroes must be regulated by a higher authority. My advice is: The /143/ sooner improvement can be brought about in this, the better, and for the following reasons.

[311] 1st. Because of the grounds-system practiced from olden times, the Aucaners of the Tapanahoni in particular now have such a land shortage that further growth of the population is thereby hindered.

[262] 2nd. The food supply of this Bush Negro society is precarious and one-sided; this threatens to become more and more unfavorable, with the consequence that the health situation will require more and more care.

3rd. The Bush Negroes cannot be considered capable of bringing about changes for the better in these agricultural methods by themselves.

[167] 4th. Occupying these districts becomes less and less attractive for the younger generation, whereby a spreading of the population over other areas takes place. The men try to find work in the lowlands or in the concerns in French Guiana.

[464] 5th. Through the wasteful use of land the supplies of wood along the rivers are in danger of becoming lost entirely.

6th. It is to be feared that unless help is offered through government channels in time to help this bush population out of the impasse, its social and economic retrogression will soon become seriously felt.

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The solution of this problem in my opinion lies in this, that in the first place agricultural methods which are based upon a better and more economical use of the land must be practiced. It is the task of the Department of Agriculture to investigate which possibilities the lands permit and which crops can best be cultivated; it is for this reason that to these observations is added a list of crops presently in use among the Bush Negroes. A small team of young Bush Negroes will have to be trained by the Agricultural Information Service to familiarize them with the new methods.

Next to that, combating the ants will have to be seriously taken in hand in conjunction with the plans for a modified agriculture. For this, too, people from the area itself will have to receive training, and a permanent work-team will have to be formed. It is unfeasible and unnecessary to clear the entire area now in use. Insecticides such as carbon sulfate, methylbromide, and parathion -- applied with the necessary caution -- could be used with success in places.

/144/ The District Administration will also have to provide co-operation in order to find a compromise between the customary laws of the Bush Negroes and the new regulations to be introduced concerning the use of land.

7. The Cultivated Crops and Their Use

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Although for the most part the cultivated plants are those generally in use as agricultural crops in Surinam, there is still not much known in detail concerning the crops that are cultivated by the Bush Negroes for their sustenance. Giving a general survey of these plants is thus necessary first of all, with a report on the way in which they are used.

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From a more historical point of view it is of interest to point to a number of important plants that are of African origin and have only still remained in use among the Bush Negroes, such as

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agobe and bongila. Furthermore presumably there are still varieties of ordinary cultivated plants present here -- such as sugar cane, bacove and bananas, species of tajer and yams -- from the

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[177] time that the runaway slaves took these with them from the plantations then in existence.

It is therefore worthwhile in various respects to explore what is being cultivated. The following summary has been put together from the data of my own observations and from information provided by various Bush Negroes. This list is not complete; what is lacking, however, is probably of minor importance.

A. Cultivated Crops That Are Grown on the Food Grounds

244 Bitter cassava (kasaba).

[262] This is the most important crop, from which the cassava bread and kwak are made. One plants the shoots in December, but also in March and April. After 12 months the harvest begins; in case of a food shortage they are dug after only seven months. Yellow and white varieties are distinguished according to the color of the contents of the tubers. To the yellow varieties belong: witti tiki, which is kept on the grounds up to two years, blaka tiki, which stands on the grounds only one year, and taja tiki, which provides produce for a long time and is especially good for the making of kwak. To the white varieties belong: amosiang, sanang kasaba, and domberi. Cassava bread is made from this. In the making of kwak all the colors are mixed together in order to obtain the desired yellow color. Each variety separately provides a less tasty product.

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[184] On the Marowijne one makes more kwak (kwaka) than cassava bread, while on the Surinam River and the Saramacca only cassava bread /a map and Figs. 1-14 appear here/ /145/ is baked with the flour. Kwak is prepared in the following manner: The tubers, after they are peeled, are put in water in a korjaal (1) for two

1. korjaal = boat.

days and then grated. This grated cassava is then allowed to sour in a box or a korjaal; after that the grated cassava is expressed

[text continues on p. 21]

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Survey map of the agricultural lands of the Bush Negroes of the Marowijne /Maroni/. Made from aerial photographs by the Central Bureau Luchtkaartering Paramaribo /Central Bureau for Aerial Surveying, Paramaribo/. Taken in 1947.

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Fig. 1. Ground of a Paramaccaner on a hill beside the river. For want of flat terrain, the slopes of hills are used. The surroundings are second growth. -- Marowijne near Grankreck, Oct. 1952.

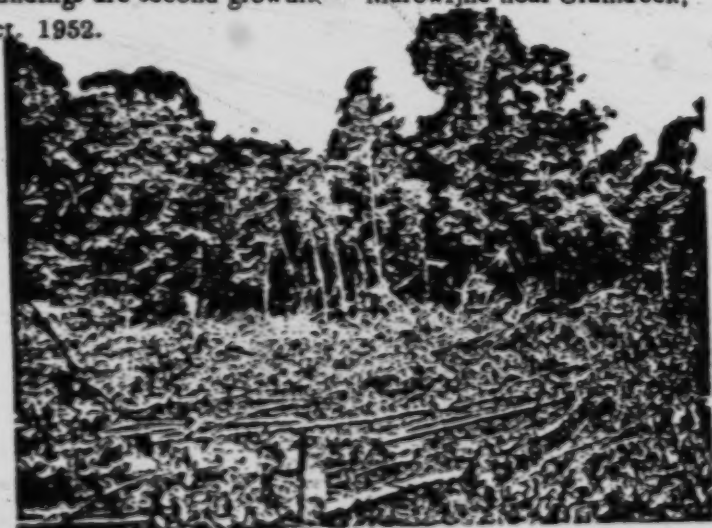


Fig. 2. Newly laid-out ground of an Aucaner, in young second growth. The slender trunks are typical. -- Tapanahoni, Saniki, Oct. 1952.



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Fig. 3. Ground on the slopes of the Malobbi range. The surroundings are primary virgin forest; in the distance, the Lely range. -- Tapanahoni, Malobbi, Oct. 1952.



Fig. 4. Newly cleared ground along the river, on a steep slope. The danger of erosion is great. The surroundings are second growth. -- Marowijne near Grankreek, Oct. 1952.

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Fig. 5. Virgin forest in the Malobbi range, with severe fire-scars from a food-ground (in the foreground). -- Tapanahoni, Malobbi, Oct. 1952.



Fig. 6. Food-ground on river terrace, planted for three months. In the foreground, rice and cassava, behind them maize. The surroundings are kapoweri and, at the right, high second growth. Tapanahoni, Drietabberje, March, 1952.



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Fig. 7. Ten-month-old food-ground with high cassava.
On the right, kaposweri; weeds in the foreground. -- Tapanahoni,
Drietabbetje, Oct. 1952.



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Fig. 8. Large, three-month-old food-ground with harvestable
maize and watermelons. Rice in the foreground. --
Tapanahoni, Drietabbetje, March 1952.

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Fig. 9. Baking cassava bread on the iron baking plate (the "pan"). -- Tapanahoni, Drietabbetje, June 1952.

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Fig. 10. Pounding the expressed pieces of cassava (in the pan in the foreground) to flour in a wooden mortar (the "matta") in order to bake bread with it. -- Marowijne, Albina, April 1953.



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Fig. 11. Threshing the rice ears on a sack with the feet. -- Tapanahöni, Drietabbetje, June 1952.



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Fig. 12. The fruits of the pina palm are collected in a basket; a beverage is made from the fruit-pulp. -- Marowijne, Albina, April 1953.

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Fig. 13. The pitting of the maripa palm, from which the kernels (lying on a plate on a kerosene tin), after drying in the sun, are used for boiling edible oil out of them. -- Tapanahoni, Drietabbetje, June 1952.



Fig. 14. Winnowing rice with the "kede," after it has been pounded in a matta. -- Tapanahoni, Granbori, May 1952.

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252 with the matapi (2) and subsequently baked on the baking plate (pan).

2. matapi = long tube of plaiting with which one expresses the juice and the water out of the grated cassava.

[251] during which the granular mass is constantly stirred. The kwak ultimately consists of dry yellow grains. One can keep kwak in good condition longer than bread. It is softened with water and eaten with some sugar (if available).

A less-used product is "afringi." For this one grates freshly peeled cassava, then expresses the grated cassava in the matapi, and dries the meal on the fire or in the sun. Subsequently one pounds this meal in the matta (3) and then kneads it with water

3. matta = large wooden mortar.

into little balls. These are boiled together with fish or meat into a soup. One calls this soup "afringi," which literally means "to throw," presumably because one throws the little balls into the pot. The same product is called "apitie" on the Surinam River.

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[262] Sweet cassava (kasaba-swieti) is little planted; the tubers are harvested after three months and eaten boiled.

[252] The most important pests in the cassava are: leaf-cutting
[225] ants, which cut off the leaves; deer, which eat the young tips and also bite off the stalks; tapirs, which consume the stalks and leaves and also trample many; koni-konis (4), which dig

4. koni-koni = Surinam rabbit.

out and gnaw the tubers; pingos and pakieras (5), which root the

5. pingo and pakiera = wild pigs.

tubers out of the ground and consume them.

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243 Rice (alésie).

Next to cassava rice is an important auxiliary crop. One sows the rice broadcast with the hand among the other crops and tjaps (6) the seed under lightly. The sowing time falls in Decem-

6. To tjap = to loosen the ground with a hoe.

[132] ber to February or March. In the fourth month the rice is mature. The harvest time therefore falls in the long rainy season from May to July (somewhat later on the Surinam River). Only the ears are cut off, and these are dried in the sun on the grounds or in the villages. Only dry-land rice is cultivated but in many varieties, such as:

kasiwini, the best kind, with long white grains;

ajengena, with short fine grains, with pounding produces a beautiful white rice;

abalahede, with flat, round grain;

witti-alesie or paramakka-alesie, slightly colored in the ear;

lebi (redi) -- alesie, yellow as paddy, grows also in swampy places;

aloeloe or loeloe, sends out shoots quickly, has a good grain;

pindé-alesie, grain speckled on the outside;

asinkini, variety with long grain, is often planted.

/146/ Still other varieties are: rexora, saka, mabosoe, moodà, sika-sirie, bakaté-saka, dendelei, mooimasra, wittifang, skati, blakatère, mesiti, pikienloeloe, trampoeloekoe.

[251] The Bush Negroes store the rice in the ears and thresh the paddy with the feet by treading on it after it has been dried on zinc sheets or on sacks. The paddy is pounded in the matta whenever it is needed for a meal. Unpolished silver-pellicle rice /zilvervlies-rijst/ is thus eaten, and this is boiled in the usual

262 manner together with meat or fish. With a good harvest one has rice throughout the year until the following harvest, but frequently [439] the quantity is sufficient for only a few months. In case of a shortage milled rice is purchased from the shops along the Marowijne.

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243 During the sowing one experiences a great deal of trouble
125 from "stondoifies" (1), which eat up the seed; the maturing ears

1. stondoifies = small pigeons, literally
stone pigeons.

are plundered by a species of blackbird, "andokie," grain parakeets
or pikoetoes, and the little rice bird, "tie." The loss that is
suffered through these birds is frequently considerable. Other
pests in the rice are not further known, or mentioned.

Bananas (bána).

245 These are always planted, but, in comparison with the
cassava, less frequently. One ordinarily sets the plants in the
ground somewhat later than the cassava shoots, in order to let
them grow at the same time. It also happens that a certain
section of a ground is planted exclusively with bananas and
bacoven because otherwise these hinder the other crops too much
with their shade. After 10-15 months the bunches are ripe.

There are various varieties in use:

granbána, ripe five months after the appearance of the bunch,
fruit long;

oemanbána, ripe three months after the appearance of the bunch;
fruit long;

patamacca-bána, idem; fruit short and somewhat sour in taste;

doengoe, idem; fruit long; frequently with twin fingers;

kodjakondre, idem; fruit short.

252 The bananas are boiled as "green bananas" or, as ripe bananas,
are first boiled and then pounded fine into "tomtom." Ripe
bananas are also pounded uncooked, then mixed with cassava
flour, and baked into a "koekoe."

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245 Bacoven (bakoeba, bákba).

Planted like the bananas. The growing time varies from 10 to 15 months. The banana-bacove is grown the most. The varieties are indicated with the following names:

bigibakoeba or langa-finga, banana-bacove with long fruit (Gros Michel type); produces the bunch after 10 months and this ripens in five months;

watramama-bakoeba, a kind of congo-bacove originally from French Guiana, short variety, bunch matures in three months;

koboto-bakoeba or soeknoe-finga, small yellow, sweet variety of the size of the apple bacove or smaller (missie-finga); bunch ripens in three months;

indji-bakoeba, short, thick, red variety, sweet in taste, with yellow fruit-flesh; bunch ripens in three months.

[262] The bacoven are only eaten as fresh fruit and are very popular.
[136] /147/ The leaves of bananas and bacoven are sometimes severely eaten by leaf-cutting ants.

244 Tajer (tāja).

One finds tajer on all grounds, standing in scattered groups. It is harvested after 8-10 months (August-October), but also continuously thereafter. There are various kinds in use:

agauw, large variety (pomtaja); tubers remain good for a long time; also found in the villages;

244 sjoe, smaller variety with yellowish tuber, tubers remain good for a long time; the leaf is eaten as a vegetable;

262 dasini, larger variety with yellowish tubers, which is frequently planted because of its tastiness; the harvesting is done in small bits at a time, for the tubers rot quite quickly; the leaf of this too, is used as vegetable; a small variety of dasini is also called chinees taja;

wititaja, smaller variety; tubers remain good for a long time; leaf is also eaten.

252 Tajer tubers are boiled, like potatoes, frequently with fish or meat and oil, into a soup.

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244 Patatas (patáta).

Patatas are planted in patches; they creep with long tendrils in between everything as a weed. Even after the grounds have been abandoned, they continue to grow in the open patches. They are harvested in the long dry season, but there are also three-month varieties. There are white, red, and yellow varieties under the following names:

plata patata, white variety, frequently planted;

lebi (redi) patata, red variety, often runs wild;

abawini, yellow variety, frequently planted on grounds;

sakoela patata, yellow variety, idem.

[252] The tubers are eaten boiled, like potatoes, usually prepared
[136] with oil, or cut into little pieces and made into a soup. Rabbits and pigs are likewise lovers of these tubers.

Napi (napi).

Napi is planted scattered next to sticks in order to allow the vines to climb. It is not missing on a single ground. The harvest time falls in the long dry season from September to November. There are red and white varieties, which are known by the following names:

kakaboeroe, red on the inside, with red peel;

gangasombo, white on the inside, with red peel;

witti napi, white on the inside, with yellow peel;

finga napi, purple-red variety with divided tubers;

waka waka-napi, purple-red variety, creeping, with large, long tubers.

[252] Napi is eaten boiled like a potato. Most of the varieties are used unpeeled; when they are prepared with meat, however, one removes the peel from the tubers.

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Yams (yamesi).

The yam is found everywhere and is planted scattered. The harvest time is October or later. Two varieties are known: maka yamesi, with thorns on stalk, planted with buds from the tubers; afakón, planted with stalk shoots.

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- 244 Yam roots frequently become very large. One cuts them
252 up and boils the pieces like tajer tubers.

Maize (kaloe).

- 243 Maize is sowed together with other crops and provides one of
the first products; the harvesting is done after three months
[184] (March). Only one variety is known. Sometimes special maize
plots are laid out (Paramaccaners).
252 The young maize is eaten boiled or roasted, sometimes
also pounded and boiled to a porridge (kaloe papa). A well-known
delicacy is "ansowé" or "asogrie," made of roasted dry kernels
finely pounded and mixed with sugar.

244 Watermelon (watramoen)

- This is planted in patches everywhere on the grounds; the
harvest time falls in March. There are two varieties in use:
[262] hesiskin and blakaskin, both of which provide small, oval-
round, white-spotted fruit with a bland-sweet, light-pink fruit-
flesh; the fruit is eaten fresh.

Pumpkin (pampoen).

- One finds this plant in many places, but never in great num-
bers.
[252] Only the oblong dark green variety is known; the harvest
time is from April on, and a long time afterwards. The fruit is
cut in pieces, boiled, and eaten.

Okra (okrò).

This crop is generally grown on the food grounds; it provides
edible fruit after three months, in February and March. Three
varieties are distinguished:

sebiwiki, with short fruit;
afoesibobi, with short fruit;
diatoetoe, with long fruit.

- 252 The young green fruit is cut into pieces and boiled to a soup,
usually together with tajer, meat, and so forth.

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244 Pinda /peanuts/ (pienda) and djoekapinda /Djuka peanuts/ (agobo).

Both are planted in patches on the grounds and not infrequently also in the villages; they bloom in March and are harvested after the rice, in June and July. The quantities that are harvested are small and amount to one or two kerosene-tins per person. Only one variety is known of both the ordinary pinda and the djoekapinda.

[252] One boils the pinda into a soup or makes peanut butter by roasting it and then pounding it in the matta. The Saramaccaners call the djoekapinda "gobogobo."

/149/Bongila.

This is related to abongra (Sesamum) with white blossoms and with flat white seeds in long capsules. It is quite often sowed broadcast among other plants, and the stalks with the capsules are harvested in June. Only one variety is known.

252 The ripe seeds, flat and white, after having first been dried in a pan on the fire, are pounded in a matta. Then one adds some salt and uses this product like peanut butter on cassava bread.

[244] It is tasty and nutritious. On the Surinam River this plant is called "waja" and the seeds are baked with the cassava flour in the bread. Like abongra, this plant is probably also of African origin.

Beans (pesi).

244 These are used very little. String beans /kousebandjes/ -- runner beans with long thin pods -- are known, and a variety

[262] with white blossoms which makes pods 20 centimeters long. Other varieties of beans are not grown, although the Bush Negroes very much like to eat pesi varieties.

249 Sugar cane (keeng or sigáloe).

This is nowhere lacking, and aside from the grounds it is also planted in the villages. With bananas it remains standing for years on the abandoned grounds and is also cut there. Three varieties are distinguished:

[212] abaiboesi, red and black marked stalks; only eaten fresh;

/149 cont./

249 pikien keeng, small variety with thin stalks; is not cut with a
[789] cutter but broken off by hand; obia (1) is made from it;

1. obia = spirit medicine.

[262] switi-keeng, the ordinary variety which is most used: the stalks
[263] are eaten fresh (chewed) or the juice is expressed with the wooden
sugar-press (ma) and boiled down to a syrup (lika) which is used
[407] in coffee or in crushed awarra (2).

2. awarra = prickly palm which supplies
edible fruit.

273 For festivals one cuts the stalks in pieces and allows the juice
to be extracted from them in water in a short korjaal (komata).
This water is later heated in a pot and fermented into an alcoholic
beverage (djojo).

245 Pineapple (nanasi).

This is regularly grown, the shoots standing scattered on the
grounds; after one year the plants produce fruit. Two varieties
are distinguished:

bigi nanasi, a white variety;

indji nanasi, likewise a white variety, but sweeter.

[262] The fruit is eaten fresh. Together with sugar cane and bananas,
pineapples continue to grow for a long time on the old grounds.

Papaya (papai).

Few papayas stand on the grounds, but many along the edges
of the villages, where they grow into long tall trees.

[262] A long red variety is called bobi papai; a short yellow variety,
[252] papai. The fruit is eaten fresh, sometimes also boiled green.

/150/ Tobacco (tabaka).

249 Tobacco is cultivated on a modest scale in various places.
The leaves are ripe for picking after 4-5 months (April to May);
the man-high plant blooms after seven months with small, pink
blooms.

/150 cont./

- 249 There is only one variety of tobacco in use, probably the same one that is grown by the upland Indians. The leaves are hung to dry from the rafters in the dwelling huts. For use, the
276 dried leaves are softened in a small tin with water, and the juice that is poured into the palm of the hand is sniffed up and blown out again.

Boembie.

- 249 This is Tephrosia toxicaria, whose roots are used as fish
226 poison. The man-high plants are found standing scattered on the grounds, where they are sowed with the other crops. The plant has hairy leaves and blooms with pink blossoms in clusters.

One uses the dried roots in order to "ponzen" with it between stones in the dry season when the river water is low. This operation consists of crushing the roots into fibers, whereby the poison is released as a milky substance and spreads in the water. In this manner warawara in particular -- in places difficult to reach otherwise -- are captured. According to the Bush Negroes, boembie works better than nekoe (1).

1. nekoe = a liana (Lonchocarpus) which is also used as fish poison.

B. Fruit Trees, Shrubs, and the Other Plants That Are Found in the Bush Negro Villages

- 241 Aside from the temporary crops that are grown on the grounds, the Bush Negro also uses fruit trees and other perennial crops that
[177] are planted in and along the edge of the villages. Most of them are well-known imported plants; some palm varieties are native. Perhaps these latter were already present on the spot when the village was established, or they more or less accidentally grew up there by the use of the pits. The following varieties are noted.

Coconut (kokondto).

- 245 Occurs practically everywhere in the older villages, but is usually sparse because of the constant sweeping of the ground;

/150 cont./

- 245
[262]
[136] In more favorable places it grows fairly well. The production is moderate. The nuts are eaten fresh or, as water nuts, are emptied by drinking. Many trunks exhibit the traces of Castnia daedalus infection (Drietabbetje, Fisiti, Granbori).

Manja (majang).

- [262] Grows in all villages into mighty trees and in February-March produces fruit which is especially favored for eating by the youth. Tetemanje and redbreast are the most common varieties. Abandoned villages along the rivers are frequently still typified by the manja trees.

Citrus.

- Is represented by lemmetje (lemmeki), sour orange /zure oranje/ (alanja), /151/ orange /sinaasappel/ (pesina), and lemon /citroen/ (soetoen). This order roughly expresses the relative frequency. They are scattered and grow strikingly well in spite of neglect. With a little effort the planting of oranges could be extended. Lemmetjes and sour oranges are frequently used to wash meat and various articles.

Guava (gubai).

- [262] Stands scattered and is never lacking; the fruit is eaten especially by the youth.

Sourop (stoeke).

- [262] Occurs here and there; the fruit is eaten fresh.

Breadfruit tree (belebung, bidebung).

- [252] Is found in many villages. It is usually the chestnut-breadfruit, of which only the pips are eaten, roasted or boiled. In Langatabbetje we also saw the ordinary breadfruit.

Koesoewé (koesoewé).

- 249 Stands in each village, but occurs less frequently than among the Indians. The large pink blossoms and the red fruit contribute

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249 greatly to the beautification of the village. The Bush Negroes use
[232] the red dyestuff from the seeds to smear on the dogs against vermin.

Cotton (katoen).

248 One sees it standing in various places along the edges of the
233 villages and among the dwelling huts. The cotton itself is in ex-
[239] ceptional cases used by the women for spinning. Calf bands
(sepoen) are made out of cotton thread after the Indian model, and
sometimes hammocks also.

Coffee.

245 Is found here and there in the forest along the edge of the
village (Drietabbetje, Pocketti). It is the small variety, probably
[272] Coffea arabica. The beans are used for coffee. The trees prob-
ably grew from kernels that at one time were taken by slaves from
the plantations.

Calabash (kabasi).

244 Grows everywhere among the dwelling huts and in neglected
corners. A distinction is made between kabasi and pikien soepoen.
[415] The wood-like pericarps of both varieties are used for all kinds
of purposes, especially for utensils (bowls, spoons) and as "koej"
for scooping the korjalen empty.

Kasjoen (kasoeng).

245 Occurs here and there and ordinarily does not supply much
[262] fruit; the latter is eaten fresh, the kernels sometimes roasted
like pinda.

[252]

Mappa.

Probably a variety of Tabernaemontana (Apocynaceae). Not
infrequently in May one sees the women returning from the grounds
with pear-shaped /152/ (up to ten centimeters long) yellow fruit,
[262] which they have gathered from a small forest tree. The fruit is
eaten fresh; one first taps on the rim with a piece of wood in
order to concentrate the milk sap in it, peels the fruit, and the

/152 cont./

245 white cucumber-like fruit flesh is eaten. The taste is refreshingly
262 tart.

249 Ricinus /castor-oil plant/ (karapata).

789 Is to be found in all villages and especially on refuse heaps.

302 The leaf is used for obia, the oil from the kernels as a hair oil.

Pepper (pépré).

244 Grows as a small shrub near the houses or along the edge of
[252] the village. The variety with small red fruit occurs especially
frequently. The fruit is eaten boiled in meat soup.

Koemboe (komoe).

245 Stands in individual specimens in and along the villages and
[252] in the forest. The kernels of this palm are gladly eaten, softened
with warm water and pounded into koemboe soup. The fruit is ripe
in February-May. A large variety is patawah.

Maripa (maípa).

[262] Absent in not a single village. The fruit provides a white,
[252] fatty fruit-flesh that is eaten fresh (May). The pits are dried
and pounded to pieces with a stone in order to obtain the three
kernels. After having dried these (in the sun), one boils from
them a food oil.

Awarra palms (awá).

[263] Stand in little groups in each Bush Negro village. The orange
fruit, which is ripe in February-March, sometimes also in June

/152 cont. /

- 245 is eaten fresh, but more frequently pounded in the matta, so
263 that the fruit flesh becomes mushy. Over this one sprinkles
sugar or sugar syrup and eats it as a delicacy (awá-popo).

Rina palm (apodong).

- 222 In April-May supplies a marble-sized black fruit
which is prepared in the manner described for koemboe.
This palm variety grows in groups in swampy places in
the forests.

Paramaribo, December, 1952.

/The following summary appears in English on
pp. 152-153 of the original source. /

SUMMARY

AGRICULTURE AS APPLIED BY THE BUSHNEGROES ALONG THE MARONI AND TAPANAHONI RIVERS

- 241 During the MEDICAL SCIENTIFIC EXPEDITION TO THE SOUTHERN
BORDER OF SURINAM from February till July 1952, in order to get an
insight into the medical problems of the interior, the opportunity was

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taken to investigate into the food supply of the Bushnegroes along the Maroni and Tapanahoni rivers. In this study agriculture, as applied by the Paramaccaner- and Aucaner Bushnegroes, and about which very little is known, is dealt with. 241

The Bushnegroes obtain their vegetable products by their system of shifting cultivation grounds, while some fruit trees are cultivated in the permanent villages. In the virgin bush they collect some palmfruits, of which they make drinks and palm oil.

The men cut and burn their grounds (each about two acres in size) during the long dry season (Sept.-Dec.). In the short rainy season following upon it (Dec.-Jan.), the women plant several crops (both annual and perennial) at the same time. Of these the harvest times differ widely, so that three months after planting time harvesting starts. Corn, okras, peanuts, rice give their products in the first half year, while later on manioc and other tuberous plants, such as taro, yams and sweet potatoes follow. Bananas and plantains, sugarcane and pineapple are harvested in the second year.

Each plot of ground is used only for two years and after that it is given prey to the quickly overgrowing secondary vegetation. Each family usually cuts two grounds, one for the husband and one for the wife, so that with the ones cut the preceding year, each family has four grounds in use. These shifting grounds often lie far apart. This is not a division of risks, but a question of family property. The wife is allowed to cut hers only on the grounds of her people and the man to cut his only on his people's grounds. The different family-areas together form the piece of land on which a village can exercise its rights. The cultivation areas of the people of the villages along the river (see map) are assigned to the village captains by the granmans (chiefs) of the different tribes.

Much land is required by this system of shifting cultivation grounds. But owing to the curious laws of agriculture, the Bushnegro is obliged to stay within certain boundaries, which leads to exhaustion of the available soil. The use of the soil is intensified by the increase in the population, and is, besides, seriously threatened by the plague of the leafcutting ants (especially *Atta sardens*). These ants principally occupy the secondary bush on the abandoned grounds, whence they undertake raids on the neighbouring shifting grounds. When an area is too seriously infected, the Bushnegroes avoid these ants — for lack of any remedy — and lay out new grounds in the virgin bush. As a result more and more secondary bush near the villages, occupied by leafcutting ants, becomes useless („ant-bushes”).

Proposed measures to correct this bad state of affairs are: destruction of the nests of the *Atta*-ants and information on agricultural methods together with importation of other and better varieties of the crops used. In this way a more economical use of the grounds becomes possible and a greater production per acre is obtained.

A list of the crops grown by the Bushnegroes and their use is added, together with a statement of the fruit trees cultivated in the villages and of the fruits collected in the virgin bush.